

CLAIMS:

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent is:

1. A method for controlling peer-to-peer remote copy (PPRC) system operations initiated from one or more host devices that desire to store data contents written to a first storage system to a second storage system over a communications link, said method comprising:
 - a) receiving copy services commands from said one or more host devices;
 - b) determining whether a received command pertains to a copy service over a PPRC relationship established for a particular customer to perform storage operations effecting data written to a first storage server having source volumes and stored in a remote second storage system having target volumes; and,
 - c) if it is determined that said PPRC relationship is already established for that customer, enabling execution of said copy services command involving data contents of source volumes and/or remote target volumes; and,
 - d) if it is determined in step b) that said PPRC relationship is not already established, determining whether the copy service command effects any volume not already in a copy services relationship; and, one of
 - e) enabling execution of said copy services command if it does not effect any volume not already in a copy services relationship or,
 - f) preventing execution of said copy services command if it does effect any volume not already in a copy services relationship.
2. The method for controlling peer-to-peer remote copy (PPRC) system operations as claimed in Claim 1, wherein said step d) further includes the step of determining whether said received command is from a storage service provider over a web-based user interface, and enabling execution of said copy services command if it is.

3. A system for controlling peer-to-peer remote copy (PPRC) operations initiated from one or more host devices that desire to store data contents written to a first storage system to a second storage system over a communications link, said system comprising:

means for receiving copy services commands from said one or more host devices and determining whether a received command pertains to a copy service over a PPRC relationship established for a particular customer to enable that customer to perform storage operations effecting data written to a first storage server having source volumes and stored in a remote second storage system having target volumes; and,

means for enabling execution of said copy services command involving data contents of source volumes and/or remote target volumes if it is determined that said PPRC relationship is already established for that customer; and,

preventing execution of said copy services command if the received copy services command does effect any volume not already in a copy services relationship.

4. The system for controlling peer-to-peer remote copy (PPRC) system operations as claimed in Claim 3, further comprising a web-based interface for enabling a storage service provider to perform copy services involving data contents of source volumes and/or remote target volumes for customers.

5. The system for controlling peer-to-peer remote copy (PPRC) system operations as claimed in Claim 4, wherein said web-based interface offers a secure communications connection for said storage service provider to perform copy services.

6. The system for controlling peer-to-peer remote copy (PPRC) system operations as claimed in Claim 3, wherein said copy services commands are communicated over in-band communication links from said host servers, said in-band communication links comprising one or more of: ESCON, FICON, FCP links.

7. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for controlling peer-to-peer remote copy (PPRC) system operations initiated from one or more host devices that desire to store data contents written to a first storage system to a second storage system over a communications link, said method comprising the steps of:

- a) receiving copy services commands from one or more host devices;
- b) determining whether a received command pertains to a copy service over a PPRC relationship established for a particular customer to perform storage operations effecting data written to a first storage server having source volumes and stored in a remote second storage system having target volumes; and,
- c) if it is determined that said PPRC relationship is already established for that customer, enabling execution of said copy services command involving data contents of source volumes and/or remote target volumes; and,
- d) if it is determined in step b) that said PPRC relationship is not already established, determining whether the copy service command effects any volume not already in a copy services relationship; and, one of
 - e) enabling execution of said copy services command if it does not effect any volume not already in a copy services relationship or,
 - f) preventing execution of said copy services command if it does effect any volume not already in a copy services relationship.

8. The program storage device readable by a machine as claimed in Claim 7, wherein said step d) further includes the step of determining whether said received command is from a storage service provider over a web-based user interface, and enabling execution of said copy services command if it is.

9. A method for controlling flash copy (FC) operations initiated from one or more host devices that desire to store data contents written to a first storage system to a second storage system over a communications link, said method comprising:

- g) receiving copy services commands from said one or more host devices;
- h) determining whether a received command pertains to a copy service over a peer-to-peer remote copy (PPRC) relationship established for a particular customer to perform storage operations effecting data written to a first storage server having source volumes and stored in a remote second storage system having target volumes; and,
 - i) if it is determined that said PPRC relationship is already established for that customer, enabling execution of said copy services command involving data contents of source volumes and/or remote target volumes; and,
 - j) if it is determined in step b) that said PPRC relationship is not already established, determining whether the copy service command effects any volume not already in a copy services relationship; and, one of
 - k) enabling execution of said copy services command if it does not effect any volume not already in a copy services relationship or,
 - l) preventing execution of said copy services command if it does effect any volume not already in a copy services relationship.

10. The method for controlling flash copy (FC) operations as claimed in Claim 9, wherein said step d) further includes the step of determining whether said received command is from a storage service provider over a web-based user interface, and enabling execution of said copy services command if it is.

11. A system for controlling flash copy (FC) operations initiated from one or more host devices that desire to store data contents written to a first storage system to a second storage system over a communications link, said system comprising:

means for receiving copy services commands from said one or more host devices and determining whether a received command pertains to a copy service over a peer-to-peer remote copy (PPRC) relationship established for a particular customer to enable that customer to perform storage operations effecting data written to a first storage server having source volumes and stored in a remote second storage system having target volumes; and,

means for enabling execution of said copy services command involving data contents of source volumes and/or remote target volumes if it is determined that said PPRC relationship is already established for that customer; and, preventing execution of said copy services command if the received copy services command does effect any volume not already in a copy services relationship.

12. The system for controlling flash copy (FC) operations as claimed in Claim 3, further comprising a web-based interface for enabling a storage service provider to perform copy services involving data contents of source volumes and/or remote target volumes for customers.

13. The system for controlling flash copy (FC) operations as claimed in Claim 4, wherein said web-based interface offers a secure communications connection for said storage service provider to perform copy services.

14. The system for controlling flash copy (FC) operations as claimed in Claim 3, wherein said copy services commands are communicated over in-band communication links from said host servers, said in-band communication links comprising one or more of: ESCON, FICON, FCP links.

15. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps for controlling flash copy (FC) system operations initiated from one or more host devices that desire to store data contents written to a first storage system to a second storage system over a communications link, said method comprising the steps of:

- a) receiving copy services commands from one or more host devices;
- b) determining whether a received command pertains to a copy service over a peer-to-peer remote copy (PPRC) relationship established for a particular customer to perform storage operations effecting data written to a first storage server having source volumes and stored in a remote second storage system having target volumes; and,

g) if it is determined that said PPRC relationship is already established for that customer, enabling execution of said copy services command involving data contents of source volumes and/or remote target volumes; and,

h) if it is determined in step b) that said PPRC relationship is not already established, determining whether the copy service command effects any volume not already in a copy services relationship; and, one of

i) enabling execution of said copy services command if it does not effect any volume not already in a copy services relationship or,

j) preventing execution of said copy services command if it does effect any volume not already in a copy services relationship.

16. The program storage device readable by a machine as claimed in Claim 7, wherein said step d) further includes the step of determining whether said received command is from a storage service provider over a web-based user interface, and enabling execution of said copy services command if it is.